

IN THE CLAIMS:

Claims 1-4 (Cancelled).

5. (Newly Added) A substrate conveyer robot comprising:

a rotatable base rotatably driven by a first motor inside a body portion of the robot and defining a pivotal center for the robot;

a first spindle mounted for rotation independent of the rotation of the rotatable base, coaxial with the pivotal center;

a second motor for rotatably driving the first spindle about the pivotal center;

a first arm attached at one end to the first spindle;

a second spindle mounted on a second end of the first arm for rotation independent of the rotation of the first arm, and first rotation transfer means for transferring rotation of the first arm to the second spindle, said first rotation transfer means including pulleys and a timing belt, mounted inside the first arm and providing a 2:1 gear ratio;

a second arm attached at one end to the second spindle;

a third spindle mounted on a second end of the second arm for rotation independent of the rotation of the second arm, and second rotation transfer means for transferring rotation of the second arm to the third spindle, said second transfer means including pulleys and a timing belt, mounted inside the second arm and providing a 1:2 gear ratio, wherein a distance between the first spindle and the second spindle is equal to a distance between the second spindle and the third spindle;

a third arm attached at one end to the third spindle;
a hand for holding a substrate attached to a second end of the third arm; and
control means for controlling angles of rotation θ and ϕ in such a manner that a center point of the substrate held by the hand moves linearly on a straight line parallel to and spaced from a line passing through the pivotal center, in an arbitrary direction within an accessible range of the hand, wherein θ is the angle of rotation of the rotatable base about the pivotable center and ϕ is the angle of rotation of the first arm about the pivotal center, whereby a substrate is inserted into and removed from a container.

6. (New) A substrate conveyer robot as claimed in claim 5, wherein said control means controls each of the angles of rotation θ and ϕ so as to satisfy the following equation:

$$\{m + 2 L \sin (\phi)\} \sin (\theta) = h \text{ (constant)}$$

wherein:

h is a constant distance between the straight line along which the center point of the substrate moves and the line passing through the pivotal center;

L is the distance between the second spindle and the third spindle; and

m is the distance between the third spindle and the center of the substrate.